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09/782,188	02/14/2001	Hakan Eriksson	040071-228	9856

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EXAMINER	
MOORE, IAN N	
ART UNIT	**PAPER NUMBER**
2661	

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/782,188	Applicant(s) ERIKSSON ET AL.	
	Examiner Ian N Moore	Art Unit 2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. An objection to the drawings is withdrawn since it is being amended accordingly, and new drawing FIG. 9 is accepted by the examiner since it reflects the originally filed method claim 1.

2. Claim objection, on claim 12 is withdrawn since they are being amended accordingly.

3. Claim rejection under 35 USC § 112 second paragraph, on claims 1-23 are withdrawn since they are being amended accordingly.

4. Claims 1-23 are rejected by the same ground of rejections.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1,4-10,12, and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura (U.S. 6,333,934) in view of Sutton (U.S. 5,644,591).

Regarding claim 12, Miura'934 discloses an apparatus (see FIG. 1a, CDMA receiving apparatus) for estimating path delays experienced by a received signal (see FIG. 1a, a received signal A), the method comprising:

logic that hypothesizes a plurality of path delays (see FIG.1a, a combined system of finger processing sections 1a to 1n and Synchronization detection and phase tracking section

4; note that the finger processing sections 1a to 1n are utilized for receiving signals from n paths, and the Synchronization detection and phase tracking section 4 assumes/hypothesizes path delay amount (i.e. phase displaced amount ±d, ±2d,..) from n paths; see col. 6, lines 19-52), each of the hypothesized path delays having a cumulative metric associated therewith (see FIG. 1b, the cumulative level measurement sections/metrics (91-93); see col. 7, line 9-56);

logic that makes a measurement based on the received signal (see FIG. 1b, level measurement sections 9 (or 91-93) measures the path level for received signal A) for each of a plurality of measurement time slots (see FIG. 1a, signal A is the CDMA signal, and thus, it contains a plurality of channels each contains time slots; note that a level measurement sections measures a signal at each finger. A signal contains the time slots. Thus, measurement section 8 measures each of a plurality of time slots) and for each of the hypothesized path delays (see FIG. 1b; note that a level measurement sections measures a signal at each finger. The Synchronization detection and phase tracking section 4 assumes/hypothesizes the paths delay for each finger in de-spreading section 5, and the de-spreading section is outputted to measurement section 8. Thus, measurement section 8 measures for each of the assumed/hypothesizes path delay; see col. 6, lines 32-36; see col. 7, lines 1-12);

logic that uses the corresponding one of the plurality of cumulative metrics (see FIG. 1b, the selected magnitude delay level E from plurality of measurement sections 8; note that level comparison 10 compares the magnitude levels from the cumulative level measurement sections and selected the highest magnitude) to determine whether the hypothesized path

delay (see FIG. 1b, the selected magnitude delay level E) corresponds to a real path delay (see FIG. 1b, one of the selected magnitude delay level D outputted by correlator 81-83 which forwards to detection circuit 13) for each of the plurality of hypothesized path delays (see FIG. 1b, Path change-over section 11; note that a path change-over section 11 uses the selected magnitude delay level E to determine whether the measured, compared and selected delay level corresponds to the respective delay magnitude level outputted by correlator, and selects the best/real path delay C produces by one of the finger; see col. 7, line 9-56).

Miura'934 does not explicitly disclose logic that determines whether a fade occurred; logic that combines the measurement with a corresponding one of a plurality of cumulative metrics only if it was determined that no fade occurred.

However, the above-mentioned claimed limitations are taught by Sutton'591. In particular, Sutton'591 teaches the logic that determines, for each of the plurality of measurement time slots (see FIG. 1, CDMA receiver 4 and despreader 6; note that the CDMA signal contains a plurality of channels each contains time slots; note that the receiver and despreader measures a pilot signal energy; see col. 3, lines 40-46) and for each of the hypothesized path delays (see FIG. 1, Searcher controller 18 provides hypothesis timing offsets/delay; see col. 3, lines 56-61), whether a fade occurred (see FIG. 1, Noncoherent combiner 14 determines whether the fade occurred by determining two clocks signals; see col. 4, lines 14-18);

logic that combines the measurement (see FIG. 1, squaring means 12; PNI(n), a real component I channel PN value) with a corresponding one of a plurality of cumulative metrics (see FIG. 1, PNQ(n) an imaginary component Q channel PN value) for each of the plurality

of measurement time slots and for each of the hypothesized path delays only if it was determined that no fade occurred (see col. 4, line 7-24; note when the system determines, for each channels and timing offset/delay, that there is no deep fading, the squaring means 12 sum the I and Q energy signal; see equation 2).

Note that Miura'934 discloses the finger receivers, which determines, compares and selects the best delay value among each finger. Sutton'591 teaches the receiver which determines whether a fade occurs, and summing the real and imaginary values when where is no fading. Thus, Miura'934's finger receiver can be modified with Sutton'591's fading determination and combination PN values. In view of this, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Miura'934, by providing a mechanism of determining whether a fade occurred and sum measurement/real PN value with imaginary PN value only if it was determined that no fade occurred, as taught by Sutton'591. The motivation to combine is to obtain the advantages/benefits taught by Sutton'591 since Sutton'591 states at col. 2, line 5-41 that such modification would minimize the total time for acquisition by speeding up the search methodology, and provide a way to test the receiver by utilizing windows for hypotheses.

Regarding Claim 1, the method claim, which has substantially disclosed all the limitations of the respective apparatus claim 12. Therefore, it is subjected to the same rejection.

Regarding claim 4, the combined system of Miura'934 and Sutton'591 discloses wherein the logic that combines the measurement with the corresponding one of a plurality of

cumulative metrics for each of the plurality of measurement time slots and for each of the hypothesized path delays only if it was determined that no fade occurred as described above in claim 1 and 12. Sutton'591 further discloses the logic that adds the measurement to the corresponding one of the plurality of cumulative metrics only if it was determined that no fade occurred (see col. 4, line 7-24; note when the system determines, for each channels and timing offset/delay, that there is no deep fading, the squaring means 12 sums or adds the I and Q energy signal; see equation 2).

In view of this, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Miura'934 as taught by Sutton'591, for the same purpose and motivation as stated above in claim 12.

Regarding claim 5, the combined system of Miura'934 and Sutton'591 discloses wherein the measurement based on the received signal for the hypothesized path delay for the measurement time slot as described above in claim 1 and 12. Miura'934 further discloses wherein the measurement based on the received signal is an amplitude measurement of the received signal (see FIG. 1b, magnitude level measurement sections 9 (or 91-93) measures the path magnitude/amplitude level for received signal A) at a time corresponding to the hypothesized path delay during the measurement time slot (see FIG. 1b, measurement section 8 measures the magnitude of the received signal which corresponds a path delay during a measuring time slot interval); see col. 6, lines 32-36; see col. 7, lines 1-12).

In view of this, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify the system of Miura'934 as taught by Sutton'591, for the same purpose and motivation as stated above in claim 1.

Regarding claim 6, the combined system of Miura'934 and Sutton'591 discloses wherein the measurement based on the received signal for the hypothesized path delay for the measurement time slot as described above in claim 1 and 12. Miura'934 further discloses wherein the measurement based on the received signal is an amplitude measurement of the received signal (see FIG. 1b, magnitude level measurement sections 9 (or 91-93) measures the path magnitude/amplitude level for received signal A) at a time corresponding to the hypothesized path delay during the measurement time slot (see FIG. 1b, measurement section 8 measures the magnitude of the received signal which corresponds a path delay during a measuring time slot interval); see col. 6, lines 32-36; see col. 7, lines 1-12).

Neither Miura'934 nor Sutton'591 explicitly discloses amplitude, absolute, a square of amplitude. Miura'934 teaches measuring the magnitude of the signal received at each finger in order to accurately define "real" or "scalar" value of the path delay. Measuring the amplitude and an absolute value of amplitude, does not define a patentable distinct invention over that in the combined system of Miura'934 and Sutton'591 since both the invention as a whole and the combined system of Miura'934 and Sutton'591 are directed to measuring the magnitude value in order to accurately define "real" or "scalar" value of the path delay. The degree in which measuring the signal magnitude value presents no new or unexpected results, so long as the result is the magnitude value, and the receiver processes such measured magnitude value in a successful way. If one utilizes to measure the magnitude, amplitude, absolute value of an amplitude, and a square of an absolute value of an amplitude, it will be

provide same result of real, scalar magnitude value of the path delay. Therefore, to measure amplitude, absolute value of the amplitude, and a square of an absolute value of amplitude in order to determine the real magnitude value of the path delay would have been routine experimentation and optimization in the absence of criticality.

Regarding claim 7, the combined system of Miura'934 and Sutton'591 discloses wherein the measurement based on the received signal for the hypothesized path delay for the measurement time slot as described above in claim 1 and 12. Miura'934 further discloses wherein the measurement based on the received signal is an amplitude measurement of the received signal (see FIG. 1b, magnitude level measurement sections 9 (or 91-93) measures the path magnitude/amplitude level for received signal A) at a time corresponding to the hypothesized path delay during the measurement time slot (see FIG. 1b, measurement section 8 measures the magnitude of the received signal which corresponds a path delay during a measuring time slot interval); see col. 6, lines 32-36; see col. 7, lines 1-12).

Neither Miura'934 nor Sutton'591 explicitly discloses amplitude, absolute, a square of amplitude. Miura'934 teaches measuring the magnitude of the signal received at each finger in order to accurately define "real" or "scalar" value of the path delay. Measuring the amplitude, an absolute value of amplitude, a square of an absolute value of amplitude does not define a patentable distinct invention over that in the combined system of Miura'934 and Sutton'591 since both the invention as a whole and the combined system of Miura'934 and Sutton'591 are directed to measuring the magnitude value in order to accurately define "real" or "scalar" value of the path delay. The degree in which measuring the signal magnitude value presents no new or unexpected results, so long as the result is the magnitude value, and

the receiver processes such measured magnitude value in a successful way. If one utilizes to measure the magnitude, amplitude, absolute value of an amplitude, and a square of an absolute value of an amplitude, it will be provide same result of real, scalar magnitude value of the path delay. Therefore, to measure amplitude, absolute value of the amplitude, and a square of an absolute value of amplitude in order to determine the real magnitude value of the path delay would have been routine experimentation and optimization in the absence of criticality.

Regarding claim 8, the combined system of Miura'934 and Sutton'591 discloses wherein the logic that combines the measurement with the corresponding one of a plurality of cumulative metrics for each of the plurality of measurement time slots and for each of the hypothesized path delays only if it was determined that no fade occurred as described above in claim 1 and 12. Sutton'591 further discloses logic that coherently combining (see col. 4, line 7-24; note when the system determines, for each channels and timing offset/delay, that there is no deep fading, the squaring means 12 reasonably/consistently/coherently sums or adds the I and Q energy signal from coherent accumulators 8 and 10).

In view of this, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Miura'934 as taught by Sutton'591, for the same purpose and motivation as stated above in claim 12.

Regarding claim 9, the combined system of Miura'934 and Sutton'591 discloses wherein the logic that combines the measurement with the corresponding one of a plurality of cumulative metrics for each of the plurality of measurement time slots and for each of the

hypothesized path delays only if it was determined that no fade occurred as described above in claim 1 and 12. Sutton'591 further discloses logic that combining (see col. 4, line 7-24; note when the system determines, for each channels and timing offset/delay, that there is no deep fading, the squaring means 12 sums or adds the I and Q energy signal from coherent accumulators 8 and 10). Sutton'591 further discloses a non-coherent accumulator 14 which received the summed signal from the squaring means 12. Thus, the combined system of squaring means 12 and non-coherent accumulator 14 non-coherently combines the measurement.

In view of this, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Miura'934 as taught by Sutton'591, for the same purpose and motivation as stated above in claim 12.

Regarding claim 10, the combined system of Miura'934 and Sutton'591 discloses the logic that determines the real path delays as described above in claim 1 and 12. Miura'934 further discloses supplying a real path delay (see FIG. 1b, the best/real path delay C) to RAKE receiver circuitry (see FIG. 1a, Rake composition section 2) for use in receiving the received signal (see col. 7, lines 15-43).

In view of this, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Miura'934 as taught by Sutton'591, for the same purpose and motivation as stated above in claim 12.

Regarding Claim 15, the claim, which has substantially disclosed all the limitations of the respective claim 4. Therefore, it is subjected to the same rejection.

Regarding Claim 16, the claim, which has substantially disclosed all the limitations of the respective claim 5. Therefore, it is subjected to the same rejection.

Regarding Claim 17, the claim, which has substantially disclosed all the limitations of the respective claim 6. Therefore, it is subjected to the same rejection.

Regarding Claim 18, the claim, which has substantially disclosed all the limitations of the respective claim 7. Therefore, it is subjected to the same rejection.

Regarding Claim 19, the claim, which has substantially disclosed all the limitations of the respective claim 8. Therefore, it is subjected to the same rejection.

Regarding Claim 20, the claim, which has substantially disclosed all the limitations of the respective claim 9. Therefore, it is subjected to the same rejection.

Regarding Claim 21 and 22, the claim, which has substantially disclosed all the limitations of the respective claim 10. Therefore, it is subjected to the same rejection.

7. Claims 2,3,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura'934 and Sutton'591, as applied to claim 1 and 12 above, and further in view of Baltersee (U.S. 2002/0037028A1).

Regarding claim 2, the combined system of Miura'934 and Sutton'591 discloses logic that combines the measurement with an cumulative metric whenever it is determined that no fades occurred for any of the hypothesized path delays for each of the plurality of measurement time slots as described above in claims 1 and 12.

Neither Miura'934 nor Sutton'591 explicitly discloses an additional cumulative metric (see Baltersee'028 FIG. 2, timing error detector 102), logic that uses the additional cumulative metric to determine whether a real path delay (see Sutton'591 FIG. 2, step 125, the delay where difference early and late estimate from step 124 is closed to zero) exists between two of the path delays (see Baltersee'028 FIG. 2, late delay estimate 113 and early delay estimate 114; note that the timing error detector determines a real path delay between early and late delay estimates; see Baltersee'028 page 3, paragraph 36).

However, the above-mentioned claimed limitations are taught by Baltersee'028. In view of this, having the combined system of Miura'934 and Sutton'591, then given the teaching of Baltersee'028, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Miura'934 and Sutton'591, by providing an additional cumulative metric to determine the path delay between late delay estimate and early delay estimate, as taught by Baltersee'028. The motivation to combine is to obtain the advantages/benefits taught by Baltersee'028 since Baltersee'028 states at page 1-2, paragraph 11-18 that such modification would provide a CDMA receiver with low complexity and cost, improve performance, synchronizing fingers and thereby reducing the interference.

Regarding Claim 3, the claim, which has substantially disclosed all the limitations of the respective claim 2. Therefore, it is subjected to the same rejection.

Regarding Claim 13, the claim, which has substantially disclosed all the limitations of the respective claim 2. Therefore, it is subjected to the same rejection.

Regarding Claim 14, the claim, which has substantially disclosed all the limitations of the respective claim 2. Therefore, it is subjected to the same rejection.

8. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura'934 and Sutton'591, as applied to claim 1 and 12 above, and further in view of Qiu (U.S. 2002/0097686A1).

Regarding claim 11, the combined system of Miura'934 and Sutton'591 discloses wherein the logic that determines, for each of the plurality of measurement time slots and for each of the hypothesized path delays, whether a fade occurred as described above in claims 1 and 12.

Neither Miura'934 nor Sutton'591 explicitly discloses logic that uses one or more previously determined channel estimates to determine whether a fade occurred (see Qiu'686 FIG. 3, FAU, Fading Adaptive Unit; note that FAU determines the previous channels estimation in order to predict fading; see Qiu'686 page 2, paragraph 22,29 and see page 4, paragraph 46).

However, the above-mentioned claimed limitations are taught by Qiu'686. In view of this, having the combined system of Miura'934 and Sutton'591, then given the teaching of Qiu'686, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Miura'934 and Sutton'591, by providing FAU that determines previous channels estimations in order to predict fading, as taught by Qiu'686. The motivation to combine is to obtain the advantages/benefits taught by Qiu'686 since Qiu'686 states at page 1, paragraph 5-6, 11-13 that such modification would

provide an adaptive system which supports higher peak data rate and throughput in digital wireless communication, and provide the adaptive transmission in the radio frequency fading channel to improve the system capacity.

Regarding Claim 23, the claim, which has substantially disclosed all the limitations of the respective claim 11. Therefore, it is subjected to the same rejection.

Response to Arguments

9. Applicant's arguments filed 12-17-2004 have been fully considered but they are not persuasive.

Regarding claims 1,4-10,12, and 15-22, the applicant argued that, "...Sutton do not provide ... **selectively** combine a measurement with a corresponding one of a plurality of cumulative metrics..." in page 12, paragraph 2.

Regarding claims 1-23, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **selectively** combine) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the first office does **not** recognize or acknowledge the "**selectively**" combine method/process.

Regarding claims 1,4-10,12, and 15-22, the applicant argued that, "...Sutton do not provide a technique for determining whether a fade has occurred...Sutton cannot

reasonably be said to teach or suggest using the detection of fade to selectively combine measurement with corresponding cumulative metrics..." in page 12, paragraph 4.

Regarding claims 1-23, in response to applicant's argument, the examiner respectfully disagrees that Sutton do not provide a technique for determining whether a fade has occurred...Sutton cannot reasonably be said to teach or suggest using the detection of fade to selectively combine measurement with corresponding cumulative metrics.

Sutton'591 teaches the logic that determines, for each of the plurality of measurement time slots (see FIG. 1, CDMA receiver 4 and despreader 6; note that the CDMA signal contains a plurality of channels each contains time slots; note that the receiver and despreader measures a pilot signal energy; see col. 3, lines 40-46) and for each of the hypothesized path delays (see FIG. 1, Searcher controller 18 provides hypothesis timing offsets/delay; see col. 3, lines 56-61), whether a fade occurred (see FIG. 1, Noncoherent combiner 14 determines whether the fade occurred by determining two clocks signals; see col. 4, lines 14-18);

logic that combines the measurement (see FIG. 1, squaring means 12; PNI(n), a real component I channel PN value) with a corresponding one of a plurality of cumulative metrics (see FIG. 1, PNQ(n) an imaginary component Q channel PN value) for each of the plurality of measurement time slots and for each of the hypothesized path delays only if it was determined that no fade occurred (see col. 4, line 7-24; note when the system determines, for each channels and timing offset/delay, that there is no deep fading, the squaring means 12 sum the I and Q energy signal; see equation 2).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are

based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Miura'934 discloses the finger receivers, which determines, compares and selects the best delay value among each finger. Sutton'591 also teaches the receiver which determines whether a fade occurs, and summing the real and imaginary values when where is no fading, as set forth above and in previous office action. Thus, the combined system of Miura and Sutton clearly teaches the applicant argued limitations.

The applicant argued that, "...no combination of Miura and Sutton would have been enabled one of ordinary skill in the art to have arrived at the Applicant' claim combinations..." in page 13, paragraph 1.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is clearly disclosed by Sutton in col. 2, lines 5-41. Thu, having the system of Miura'934 and then given the teaching of Sutton'591, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Miura'934, by providing a mechanism of determining whether a fade occurred and sum measurement/real PN value with imaginary PN value only if it was determined that no fade occurred, as taught by Sutton'591. The motivation to combine is to

obtain the advantages/benefits taught by Sutton'591 since Sutton'591 states at col. 2, line 5-41 that such modification would minimize the total time for acquisition by speeding up the search methodology, and provide a way to test the receiver by utilizing windows for hypotheses.

Regarding claims 11 and 23, the applicant argued that, "...no combination of Miura, Sutton and Qiu would have motivated one of ordinary skill in the art to arrive Applicant' claim 11 and 23 combinations..." in page 13, paragraph 3.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is clearly disclosed by Qiu in page 1, paragraph 5-6, 11-13. Thus, having the combined system of Miura'934 and Sutton'591, then given the teaching of Qiu'686, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Miura'934 and Sutton'591, by providing FAU that determines previous channels estimations in order to predict fading, as taught by Qiu'686. The motivation to combine is to obtain the advantages/benefits taught by Qiu'686 since Qiu'686 states at page 1, paragraph 5-6, 11-13 that such modification would provide an adaptive system which supports higher peak data rate and throughput in digital

wireless communication, and provide the adaptive transmission in the radio frequency fading channel to improve the system capacity.

In view of the above, **the examiner respectfully disagrees** with applicant's argument and believes that the combination of references as set forth in the 103 rejections is proper.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM
3/21/05

BOB PHUNKULH
PRIMARY EXAMINER